(No Model.)

H. F. COOK.

FLOWING WELL.

No. 459,826. Patented Sept. 22, 1891.

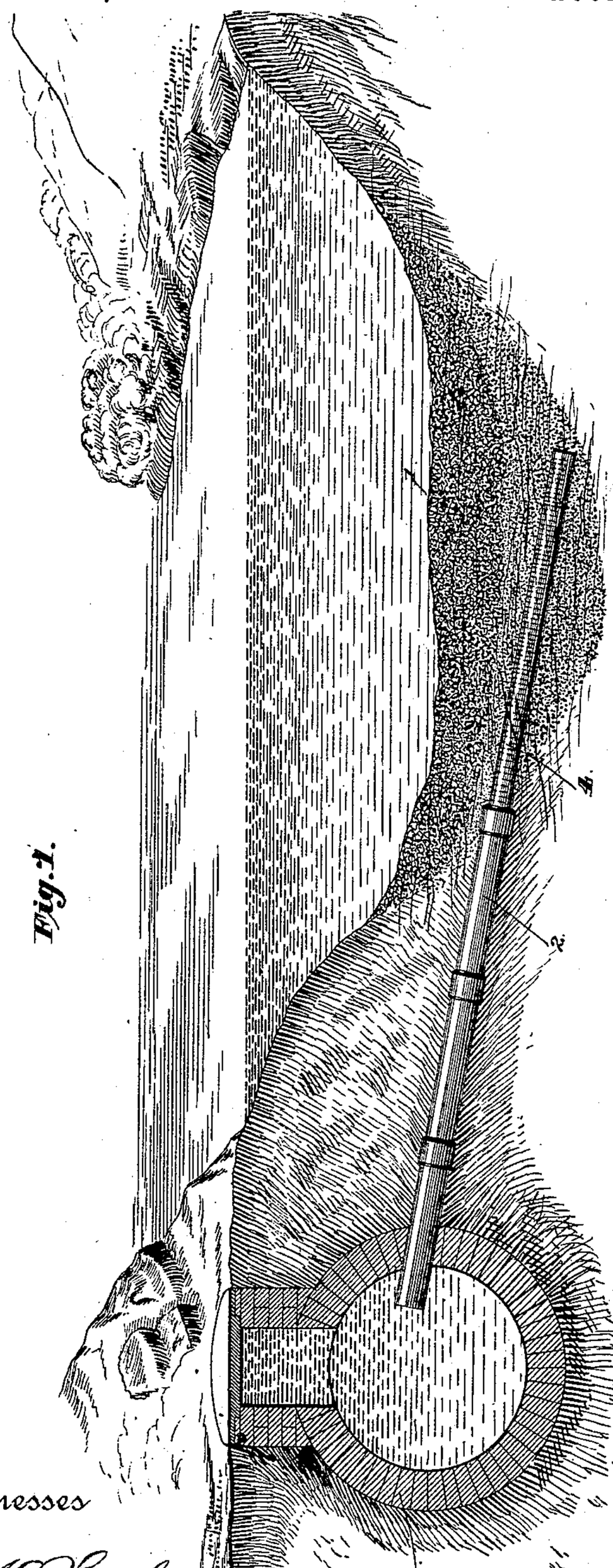

Fig. 1.

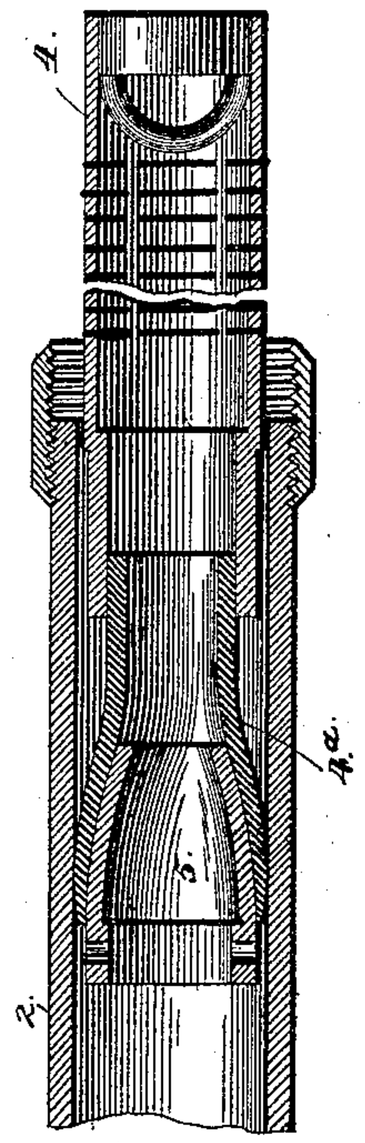

Fig. 2.

Witnesses

M. C. Fowler

Wm. Bagger.

Inventor

Henry F. Cook

By his Attorneys

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UNITED STATES PATENT OFFICE.

HENRY F. COOK, OF ST. LOUIS, MISSOURI.

FLOWING WELL.

SPECIFICATION forming part of Letters Patent No. 459,826, dated September 22, 1891.

Application filed December 5, 1889. Serial No. 332,626. (No model.)

To all whom it may concern:

Be it known that I, HENRY F. COOK, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented a new and useful Flowing Well, of which the following is a specification.

This invention relates to an improved process of constructing flowing wells, as will be hereinafter fully described, and pointed out in the claim.

Heretofore in constructing driven wells the pipes have been driven approximately vertically into the ground. It follows that when the water-bearing strata have been reached the same have been pierced vertically, and inasmuch as the veins of water are usually of limited extent vertically only a limited supply of water has been obtained from each vein. In cases where a large supply of water has been required, such as the water-supply of cities, it has therefore been necessary to drive a large number of wells or to drive the wells to such a depth as to tap a number of veins. Such process of construction or of producing a water-supply has been tedious and expensive and open to other objections, which I aim to overcome by my present invention. It may first be stated that experience has demonstrated that in localities where flowing water is found in the shape of rivers extensive veins of pure water are usually found at a certain depth below the river-bed, usually from thirty to forty feet. The exact or approximate depth at which such veins are found can usually be determined by preliminary soundings. These veins, although frequently of limited extent vertically, are usually of a considerable extent laterally; and the object of my invention is to endeavor to tap such veins by means of pipes driven in such a manner as to enter the said veins laterally in order that strainers of a considerable length may be used for the purpose of providing each pipe which may be driven with an ample supply of water from a single vein, the main object being to utilize the natural filter formed by the permeable strata forming part of the river-bed, and a further object being to apply as great an area of strainer-surface as possible. The pipe communicating with the natural filter-bed is therefore driven approximately horizontal, which is usually the greatest dimension of such stratum.

In carrying out my invention the depth below the river-bed at which veins of pure water are to be found is first determined as nearly as possible by preliminary soundings. I then proceed at a suitable distance from the river-bank to drive the pipes at an obtuse angle to the surface, which angle will be calculated according to the depth and location of the water-veins and the distance from the bank at which operations are commenced, after which the pipes 11 are driven by means of hydraulic machinery of any suitable construction. When veins of water are encountered, it will be seen that such veins are pierced by the pipe at an obtuse angle, and that consequently a considerable length of pipe will extend through the water-bearing vein. After a sufficient length of pipe has been driven a strainer is inserted, and the piping is then withdrawn until the strainer is left exposed. A suitable tunnel or conduit is then constructed approximately parallel to the river-bank, into which the flow of one or more wells or pipes may be directed, and from which the water-supply may then be taken in any convenient manner.

In the drawings hereto annexed, Figure 1 is a transverse sectional view illustrating my invention, and Fig. 2 is a sectional view of the lower end of one of the pipes and strainers.

Like numerals of reference indicate like parts in all the figures.

1 designates the river-bed. 2 designates the well-pipe, which is driven obliquely into the ground in such a manner as to extend obliquely under the river-bed. The well-pipe consists of several sections connected by couplings in the usual manner. 4 designates the strainer, which is inserted through the well-pipe, after which the latter is withdrawn, leaving the strainer exposed. The strainer is secured in the well-pipe by means of a flexible coupling or connection 4^a and a spreader 5. All these parts are of ordinary construction.

6 designates the conduit or tunnel into which the discharge end of the well-pipe extends.

In carrying out my invention I do not limit myself to any particular method or process of

driving the well-pipes or to any particular construction and arrangement of said pipes and the strainer, but reserve the right to the use of pipes and straining devices of any well-known construction, as well as to any well-known and approved method of driving the pipes and of constructing the tunnel or water-conduit.

I claim as my invention and desire to secure by Letters Patent of the United States—

The process of obtaining a water-supply, which consists in first determining by preliminary soundings the approximate location and extent of water-veins below the bed of a river or similar body of water, then driving tubular wells from the bank of the river at an obtuse angle to the surface of the ground and to the water vein or veins, then inserting a strainer, then partially withdrawing the pipe and securing the strainer, and finally constructing a conduit to receive the discharge of the tubular well or wells, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

HENRY F. COOK.

Witnesses:

CLARENCE G. SMITH,

ALFRED F. COOK.